National Institutes of Health
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Clinical Trials Data and Safety Monitoring Boards

Background

NIH requires data and safety monitoring for all clinical trials to ensure the safety of participants and the validity and integrity of the data. The type and method of monitoring is commensurate with risk, complexity and size of the trial. One common method of monitoring, which has been a component of some clinical trials since at least the early 1960's, is the Data Safety Monitoring Board (DSMB).

DSMBs --also known as Data Safety Monitoring Committees (DSMCs) or Data Monitoring Committees (DMCs)-- are generally used for Phase III (efficacy, effectiveness and comparative) trials, but may be used for Phase I or Phase II trials. Data and safety monitoring for NIH trials is guided by **NIH policy** (1998)[1]**, guidance**[2], and the **policy of the** individual NIH Institute and Center (**IC**) funding the research. Food and Drug Administration (FDA) guidance[3] for clinical trial sponsors requires safety monitoring for FDA-regulated trials and generally recommends use of DSMBs for high-risk trials.

What is a DSMB?

DSMBs are committees of independent experts who perform unbiased reviews of trial data to ensure the safety of participants in an ongoing clinical trial. DSMBs **periodically review accumulating data as a trial progresses to monitor safety, effectiveness, and trial conduct issues**. DSMBs determine if any adverse events reported from the trial are dangerous to participants and if they may be related to the product being studied, and make **recommendations** to the sponsor[4] **regarding continuing, altering, suspending, or terminating a trial**. DSMBs cannot themselves suspend a trial or recommend that the particular vaccine, medication, or intervention being studied be approved or used.

Requirements and Processes

NIH requires monitoring for all clinical trials it supports. The level of monitoring required for the clinical trial should be commensurate with the risk, size, and complexity of the trial. A DSMB is required when a multi-site clinical trial will involve an intervention that poses potential risk to study participants.

Membership

The trial sponsor generally selects independent experts for the DSMB. To maintain independence, representatives from the sponsor, funder, or study team are not members of the DSMB and the membership of the DSMB is not made public while the trial is ongoing.

Members may include:

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[1] https://grants.nih.gov/grants/guide/notice-files/not98-084.html
[2] https://grants.nih.gov/policy/humansubjects/policies-and-regulations/data-safety.htm
[3] https://www.fda.gov/media/75398/download
[4] The sponsor may be an individual or pharmaceutical company, governmental agency, academic institution, private organization, or other organization and is the person who takes responsibility for and initiates a clinical investigation.

- clinical trial experts,
- biostatisticians,
- bioethicists,
- clinicians, and
- scientific experts in the disease or type of treatment under study.

Members may receive nominal compensation for their DSMB service.

Confidentiality and Conflicts of Interest

DSMB members should not have real or potential conflicts of interest with or financial stake in the research outcome and should disclose any potential conflict of interest for review. Members commit to maintaining confidentiality of any interim data results and their recommendations.

DSMB Governance and Review

A DSMB charter is established to describe its governance, which includes the composition of the DSMB, frequency of meetings and meeting format, role of the DSMB, and content and format of trial data to be reviewed. DSMBs members may discuss aggregate data that focus on trial conduct, enrollment, and timelines in an open meeting session where they may interact with the trial sponsor or lead investigator. Unblinded, comparative interim data is viewed and discussed only by DSMB members in a closed session. Members contribute their expertise and discuss their viewpoints to derive a recommendation.

Recommendations and Reporting

The DSMB will make recommendations about the continuation of the trial to the sponsor or in some cases to a trial steering committee. A DSMB may recommend the trial

- continue as designed;
- continue with major or minor modifications;
- temporarily suspend enrollment and/or study intervention until some uncertainty is resolved; or
- terminate the study early because an endpoint has been met.

The sponsor reports the DSMB's recommendations to the study investigators who are responsible for reporting the DSMB's recommendations to the overseeing Institutional Review Board (IRB) and, if appropriate, the funder (e.g., NIH IC) and FDA. If any changes are made to the trial, they must be reported to the IRB and FDA.

Decisions

The **sponsor makes the decision** about what actions to take regarding the trial's continuation, though FDA can suspend an ongoing clinical trial. DSMBs do not make decisions about trial continuations and are ***not*** **involved in FDA approval decisions** for treatments and vaccines.